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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,107	05/24/2001	Filips Van Liere	NL 000278	1459

24737 7590 12/23/2008

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EXAMINER	
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ART UNIT	PAPER NUMBER
2628	
MAIL DATE	DELIVERY MODE
12/23/2008	PAPER

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FILIPS VAN LIERE

Appeal 2008-5718
Application 09/864,107
Technology Center 2600

Decided: December 23, 2008

Before ROBERT E. NAPPI, JOHN A. JEFFERY,
and KARL D. EASTHOM, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 1-3, 5-12, 14-19, 26-30, and 32-33.[1] (Br. 2).[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellant claims a mouse controlled graphical interface system for making measurements on a medical image displayed on a computer screen. The system also uses modifier keys on a keyboard. The measurement procedure of the invention first involves moving the mouse to a screen position, clicking the mouse button, and clicking a shift key to mark a position on the screen. Moving the mouse to a second position and clicking it causes a first line and distance to be displayed. Moving the mouse to a third position and clicking it causes another line, a distance from the second position to the third, and an angle between the two lines, to be displayed. Moving the mouse to a fourth position and clicking it causes a display of area measurements. Hence, the mouse enables at least three different measurement types without a user first specifying the type of measurement to be performed. (Spec. 3: 8-17; 4: 3-10 7:10-22; Figs. 3-5).

Claim 1, illustrative of the invention, follows:

1. A method for providing and processing a cursored user interaction with a spatially displayed medical image and producing graphics related data on said medical image, wherein said method comprises the steps of:

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[1] Appellant's erroneous reference to claim 25 (canceled (Br. 36)), as rejected (Br. 4), is omitted (*see also* Ans. 3)

[2] The Examiner's Answer (mailed July 24, 2007) ("Ans.") and Appellant's Brief (filed June 8, 2007) ("Br.") are referenced in this opinion.

providing a menu-less graphical interface;

displaying, essentially unobstructed, said medical image in a substantial portion of said graphical interface without the presence of menus, toolbars and control panels on said graphical interface;

controlling a mouse computer interface device having at least one button;

displaying a pointer symbol on said graphical interlace, wherein said pointer symbol represents a current position of said mouse on said graphical interface;

tracking a status of each of said at least one button;

detecting a position of said mouse, wherein said position detection step is activated upon actuation of one of said at least one button;

generating one of a plurality of different measurement graphics related to a predefined set of measurement operations on said medical image upon at least one actuation of said at least one button;

when said medical image is displayed on said graphical interface without the presence of menus, toolbars and control panels, enabling the generation of different measurement graphics based only upon actuation of said at least one button of said mouse when said pointer symbol is situated on said medical image such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image, and

enabling the generation of the at least three measurement graphics without requiring a user to define in advance the type of measurement graphic being generated, wherein one of the measurement graphics is an angle value quantity which is assigned to a middle point of a continuous triple-point actuating/positioning.

The Examiner relies on the following prior art references to show unpatentability:[3]

Fenster	US 5,454,371	Oct. 3, 1995
Echerer	US 5,740,267	Apr. 14, 1998
Buxton	US 5,798,752	Aug. 25, 1998
Stockham	US 6,081,267	Jun. 27, 2000

The Examiner rejected claims 1-3, 5-12, 14-19, 26-30 and 32-33 under 35 U.S.C. § 103(a) based upon the teachings of Echerer, Fenster, Stockham and Buxton.

ISSUE

Appellant contends that the references collectively fail to teach or suggest the final two steps of the method as recited in claim 1. Appellant argues similarly with respect to corresponding elements in apparatus claim 10. (*See e.g.*, Br. 15, 16, 24, 28-31). Appellant makes no separate patentability arguments with respect to the remaining claims (*See* Br. 28). Accordingly, we select independent claim 1 as representative.

The issue: Did Appellant demonstrate error in the Examiner's finding that the references collectively teach the final two steps of claim 1?

[3] The Examiner's reference to Killcommons (Ans. 3), not germane to this appeal, is omitted.

FINDINGS OF FACT (FF)

1. As indicated *supra*, in Appellant's system, moving the mouse to a screen position, clicking the mouse button, and clicking either a keyboard shift or control key instigate a measuring procedure and mark a first position on the screen. Thereafter, moving the mouse to a second position and clicking it generate the display of a first line (between the first and second positions) and its length. Moving the cursor to a third position and clicking it generate the display of another line and its length, and an angle between the two lines. Another mouse movement and click generate the display of a closed polygon and its area. (Spec. 3: 3-17; 4: 3-10; 5:13 to 10:29; Figs. 1, 3-5). While Appellant generally discloses "[c]licking a mouse button [. o]ptionally with one or more modifier keys," (Spec. 4: 19), each disclosed embodiment involves a "click with shift modifier to mark first point on image," or a "click with control modifier to mark first point on image." (Spec. 5:17; 6:16, 27; 7:11; 8:9, 32; 9:24; 10:2).[4]

2. Echerer discloses three alternative embodiments for modifying images, including, *inter alia*, drawing lines, and generating distance, angle and area graphics. (Col. 8, l. 56 to col. 9, l. 36; col. 10, ll. 2-10). The preferred embodiment employs

> a variety of "soft controls" (buttons, slides, and adjustment tools created using software and operated with a mouse). . . displayed on one portion of a monitor while the image is displayed on another portion . . . . Alternatively, dual monitors may be used to display the image and the soft controls. Still another alternative embodiment is to use external, hardwired

[4] Some embodiments refer to a "begin" or "control" point, rather than a "first" point.

> analog control circuits and a single monitor used to display the image.

(Col. 10, ll. 2-10).

3. To display distance measurements, Echerer discloses selecting a "Distance" button in the Manual Analysis menu, which causes the CPU to prompt the user to report the coordinates of the next two consecutive points as "clicks" of a left mouse button. (Col. 13, ll. 32-49). After creating two lines with the "Distance" button, to measure angles between the two lines, a user selects the "Measure Angle" button. Clicking on two consecutive points causes the system to display, from memory, the two closest lines. "Basic trigonometry is used to calculate the angle between the two lines (4 coordinates) which is then written in the label text . . . ." (Echerer, col. 15, ll. 16-34).

4. Fenster's system provides multiple different measurement graphics in one generic "Measure" mode, using a mouse. In Fenster's system, to measure distance on medical images, a user selects a "Measure" icon, after which, "the user simply . . .use[s] the graphical input device 38 to indicate the two end points over which the distance is to be measured. If an area is to be measured, the user must identify at least three points." The display module connects adjacent points with straight line segments and computes the overall line length and area bounded by the lines joining the points. (Col. 23, ll. 25-39; Fig. 27; Abstract).

5. Appellant states that Fenster "only teaches two different measurement graphics." (Br. 16)

6. Fenster teaches replacing a single button input mouse and icon system with a "multi-button mouse, a digitizer, a light pen, a trackball, a keyboard or the like or any combination of the above." When such input

devices are used, "different inputs can be chosen to represent different commands or to select the various option icons." (Fenster, col. 23, l. 62 to col. 24, l. 3).

7. Buxton's system reports the coordinates of the object upon the first click of a mouse on the corner of the object. The system reports, upon a second click at a second point on the object, the length and slope from the first point to the second. Upon a third click, the system reports the angle between the last three points clicked. (Buxton, col. 19, ll. 55-63).

PRINCIPLES OF LAW

"[T]here must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). "On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness . . . ." *Kahn*, 441 at 985-86 (*quoting In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998).

"[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740 (U.S. 2007) (*quoting Sakraida v. Ag. Pro. Inc.*, 96 S. Ct. 1532 (1976)). "[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *Id.* (*citing United States v. Adams*, 86 S. Ct. 708 (1966)).

ANALYSIS

The disputed steps of Appellant's claimed invention, as recited in claim 1, amount to clicking a mouse at least one time inside an image to obtain different measurement types, including an angle measurement, without first specifying the measurement type, without moving the mouse outside the image, and without displaying "menus, toolbars, and control panels." (*See* FF 1, claim 1). Appellant's disclosure reveals that in addition to at least one mouse click, the method requires pressing a control or shift key (on a keyboard or otherwise) prior to generating the three different measurement graphics. (FF 1).

One portion of Echerer relied upon by the Examiner to support the rejection (Ans. 9, *citing* Echerer col. 10, ll. 1-10), discloses an analog hardwired alternative to using "soft controls" described as buttons, slides, and adjustment tools. In other words, Echerer teaches eliminating the soft keys as recited in claim 1:"menus, toolbars, and control panels."[5] (FF 2). Using Echerer's hardwired embodiment to replace Fenster's "soft" icon "Measure" selection amounts to a predictable substitution of prior art elements according to their established functions, *see KSR supra*. Moreover, Fenster amplifies Echerer's teachings, by specifically disclosing, *inter alia*, making multiple selections with a multi-button mouse, or a keyboard and a mouse, to replace icon and single button mouse selections (FF 6).

[5] Eliminating merely one of the three soft key alternatives from Echerer's system meets claim 1, due to the conjunctive "and," recited therein. Regardless, the proposed combination eliminates all three.

After the hard-wired "Measure" selection suggested by the combination of Echerer and Fenster, "only upon" clicking Fenster's single or multi-button mouse at least one time, are measurement graphics, i.e., distance and area, generated. (*see* FF 4-6). Consequently, the combination teaches "when said medical image is displayed on said graphical interface without the presence of menus, toolbars and control panels, enabling the generation of different measurement graphics based only upon actuation of said at least one button of said mouse when said pointer symbol is situated on said medical image such that the measurement graphics are generated without movement of said pointer symbol outside of said medical image," thereby meeting the second to last step recited in claim 1.

The step does not preclude choosing Fenster's "Measure" selection with a hard-wired device, like a keyboard, or other actuation device, including *inter alia* a multi-button mouse, when Fenster's medical image is displayed, because that type of selection occurs without moving Fenster's mouse. Appellant's disclosed system specifically employs a similar key and mouse system, or generally, a similar multi-button mouse. (*See* FF 1).

Thus, interpreting the enabling clause in that step; i.e., "enabling the generation of different measurement graphics based only upon actuation of said at least one button of said mouse," as not precluding a previous hardwired measurement enablement, is consistent with Appellant's disclosure. In other words, that clause recites "only upon," not "upon only," "actuation of said at least one button of said mouse." In light of Appellant's disclosure, the phrase "only upon" reasonably means "only slightly after" the subsequently required enabling actuation of least one mouse button. (*See* FF 1). In any case, Fenster's multi-button alternative (FF 6), employed,

as modified, to enable both the "Measure" selection and thereafter mark the enabling graphic points, like Appellant's shift key and mouse selections, meets the claim, even if the other hardwired alternatives do not.

Fenster also discloses, without dispute (FF 4, 5), after the hardwired "Measure" selection, "enabling the generation of the at least [two][6] measurement graphics without requiring a user to define in advance the type of measurement graphic being generated," generally as required by the last step of claim 1. Appellant disputes the Examiner's finding that motivation exists to combine Buxton's third measurement graphic, as required by the last step, "an angle value quantity which is assigned to a middle point of a continuous triple-point actuating/positioning." (*See* Br. 16, 28-31).

Appellant's arguments are based on alleged vast differences between the two systems. (*See id.*). However, such arguments lack merit because the Examiner's rejection relies primarily upon well-known basic angle measurement theory involved in both systems, not the alleged differences in hardware (*see* Ans. 12-13, 52-53). Echerer implicitly and Buxton explicitly each teach the angle value quantity recited by the claim. The recited "middle point of a continuous triple-point" simply refers to the point where two lines intersect. (*See* Spec. Fig. 5). Echerer generally discloses finding an angle between any two lines on a display, using "[b]asic trigonometry," with such lines defined by four points. (FF 3). As the Examiner explained (Ans. 12) without challenge by Appellant, such a general disclosure

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[6] Claim 3 requires three such measurement graphics. Fenster's generic "Measurement" selection enables generation of at least two, i.e., three, measurement graphics without requiring a user to define in advance the type of measurement; i.e., line length, perimeter, and area (FF 4)

necessarily contemplates a more specific intersection of two lines defined by three points.[7]

Hence, as stated, Buxton (FF 7) simply explicitly teaches what Echerer implicitly teaches. Therefore, all of Appellant's arguments directed to the extra tools and hand devices allegedly required by Buxton, and relied upon by Appellant to support the alleged lack of motivation (*see e.g.* Br. 27-30), are not germane to the proposed modification. Echerer requires little more than mere algorithmic modification, if that, to implement Buxton's teachings to meet the triple point measurement as set forth in claim 1.

Following *KSR*, *supra*, 127 S.Ct at 1740, the claimed combination amounts to a simple arrangement or substitution of old elements or techniques: hardwired keys in place of soft menu functions, and a generic simplified measurement selection to generate different measurements in place of three separate selections. The claimed combination also requires recognition of a well-known basic trigonometric fact, the inherent intersection between two nonparallel lines on a single plane. Further, as the Examiner generally found, *inter alia*, Echerer, Fenster, and Buxton suggest eliminating menus and using a mouse to provide unobstructed images and simplify controls. (*See e.g.* Ans. 10, 11, 29, 30, 52, 53; FF 2, 4, 7). Such a simple arrangement and substitution of ". . . 'old elements with each performing the same function it had been known to perform' and yield[ing]

[7] In any case, the two lines, on a single image plane of the display eventually intersect at a hypothetical third point (unless they are parallel). Consequently, Echerer's angle value quantity is necessarily related (i.e., assigned) to a hypothetical intersection point, the recited middle point.

no more than one would expect from such an arrangement, [renders] the combination . . . obvious." *KSR*, 127 S. Ct. at 140.

Appellant fails, under *Kahn*, to demonstrate error in the Examiner's findings. Accordingly, for the reasons discussed above, we sustain the Examiner's rejection of independent claims 1 and 10, and dependent claims 2-3, 5-9, 11-12, 14-18, 26-30, and 32-33, not separately argued. We also sustain the rejection of independent claim 19, not separately argued, but incorporating some of the limitations of claim 1, as discussed further below.

SUMMARY

Appellant did not demonstrate error in the Examiner's finding that the references collectively teach the final two clauses of claim 1. We sustain the Examiner's rejection of claims 1-3, 5-12, 14-19, 26-30, and 32-33.

New Ground of Rejection Under 37 C.F.R. § 41.50(b)

We hereby enter a new ground of rejection under 37 C.F.R. § 41.50(b) for claim 19.

35 U.S.C. § 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 19 is rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter for the reasons that follow.

Under § 101, four categories of subject matter are eligible for patent protection: (1) processes; (2) machines; (3) manufactures; and (4) compositions of matter. 35 U.S.C. § 101. In, *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972), the Court held claims nonstatutory because they "were not limited . . . to any particular apparatus or machinery." Similarly, mere signals are not statutory. "A transitory, propagating signal like *Nuijten's* is not a 'process, machine, manufacture, or composition of matter.' Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter." *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007) (holding signals alone are not statutory).

With these legal principles in mind, we turn to the claimed invention:

19. A machine readable computer program, said program implementing a menu-less graphical interface and arranged for processing cursored user interaction with a spatially displayed medical image for producing graphics related data on such image, for implementing a method as claimed in Claim 1, said program being arranged for sensing mouse positionings and/or actuations and for effecting inherent measuring functionalities based on relative such positionings with respect to an associated imaged medical object, and for subsequently outputting representations of said measuring functionalities for displaying in association with said medical object.

The issue before us: is the machine readable computer program of independent claim 19[8] statutory?

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[8] While claim 19 refers to claim 1, claim 19 is an independent claim. *See e.g. Ex parte Moelands*, 3 USPQ2d 1474, 1987 WL 124288, at *4, (BPAI 1987) (Examiner-in-Chief Lovell, dissenting-in-part, describing such a claim reference technique as "a shorthand form of claim drafting which eliminates
Footnote continued on the next page.

Appellant discloses a "machine readable computer program" as follows: "Persons skilled in the art will recognize that the above disclosed method may be stored on a data carrier as a computer program that can effect of enhance an existing image processing machine to attain features of the present invention." (Spec. 10:30-32).

Thus, according to Appellant's disclosure, the claimed machine readable computer program covers a mere signal. Under *Nuijten,* such a signal is not a process, machine, manufacture, or composition of matter, and thus, is nonstatutory. Further, such a program, is "not limited . . . to any particular apparatus or machinery," *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972).

DECISION

We affirm the Examiner's decision rejecting claims 1-3, 5-12, 14-19, 26-30 and 32-33. We also enter a new ground of rejection under 37 C.F.R. § 41.50(b) for independent claim 19. "A new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." *Id.*

37 C.F.R. § 41.50(b) also provides that the Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the

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the need for repeating the defined elements set forth in the referenced claims").

> examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

37 C.F.R. § 41.50(b)

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